(a) when the seismic monitoring equipment installed at the Indian Meteorological Department was procured;

(b) whether it is a fact that because cf the obsolete equipment, the Indian Meteorological Department had no clue about the devastating earthquake in Maharashtra;

(c) if so, who is responsible for this neglect and what action has been taken against the officials for dereliction of their duty; and

(d) what are the future pains of the Indian Meteorological Department to modernise the seismic monitoring depart' ment ?

THE MINISTER OF STATE IN THE PRIME MINISTER'S OFFICE AND MINISTER OF STATE IN THE DEPARTMENTS OF ATOMIC ENERGY AND SPACE WITH ADDITIONAL CHARGE OF THE MINISTER OF STATE IN THE MINISTRY OF SCIENCE AND TECHNOLOGY (SHRI BHUVNESH CHATURVEDI) *: (a) During 1990's digital seismographs have been installed at five observatories of India Meteorological Department at New Delhi, Shillong, Pune, Kodaikanal and Dharamsala (HP). Under a collaboration programme between Department of Science & Technology and Russia, 10 broad band seismographs are being procured from Special Design Bureau, Russia for further modernisation.

Since 1979, a digital and analog seismic research observatory with bore hole sensors was started by IMD at Shillong in collaboration with United States Geological Survey.

During 1962-94, in collaboration with United State Geological Survey, IMD established 4 observatories equipped with modeln equipments at Delhi, Pune, Kodaikanal and Shillong. Tnese 4 observatories from a part of World-wide Network ef Seismological Stations.

(b) No, Sir There is no- equipment and technology. available anywhere in the world to predict earthquakes in time, space and magnitude with reasonable accuracy.

(c) Question does not arise.

(d) l.M.D. has been replacing the old sype of seismographs with modern instruments in a phased programme. During the 8th Five Year Plan period 8 new observatories are planned to be equipped with state-of-art technology and 8 other stations modernised. In the Mission Mode Project, now under formulation by the Department of Science and Technology. The India Meteorological department proposes to set up more observatories equipped with modern equipment.

RESEARCH WORK ON THE EARTHQUAKE PREDICTION TECHNIQUES

3262. SHRI V. NARAYANASAMY : Will the PRIME MINISTER be pleased lo state :

(a) whether Government's attention has been drawn to a newsiteni in Hindustan Times of 2nd October, 1993 that recently a controversy had broken out between two top scientists over the research on prediction of earthquake in the earthquake-bound Killari area of Western Maharashtra;

(b) if so, the reaction of Government thereto and the steps taken by Government for forewarning people correctly by the scientists by using the modern techniques so that the people could be moved to safer places to minimise the loss of lives;

(c) what budget provision has been made by Government in regard to such research by scientists in CSIR and other research institutions and whether the provision made is sufficient to carry out such researches on a large scale keeping in mind the large scale losses suffered in Maharashtra; and

' (d) what steps have been takes by Goverment to provide for a much larger provision for research in this area By the institutions ?

THE MINISTER OF STATE IN THE PRIME MINISTER^ OFFICE AND MINISTER OF STATE IN THE DEPARTMENTS OF ATOMIC ENERGY AND SPACE WITH ADDITIONAL CHARGE OF THE MINISTER OF STATE IN THE MINISTRY OF SCIENCE AND TECHNOLOGY (SHRI BHUVNESH CHATURVEDI) : (a) arid (b) There is no controversy oyer the status of research in earthquake prediction as reported in Hindustan Times dated 2nd October, 19£3. The variation is only in the perception which cannot be ruled out in the case of such complex problems. The state of art for earthquake prediction is still at an elementary level even in advanced countries arid no short-term deterministic prediction of earthquakes is feasible at present enabling advance movement of people to safer places in such eventualities.

(c) and (d) In CSIR, National Geophysical Research Institute, Hyderabad is the main laboratory doing R&D work ib this regard and it has been allocated Rs, 14 lakhs foi the period from April, 1993 to March, 1996 for this purpose. Besides, Rs. 5 crores each has been allocated to Department of Science & Technology's semismicity programme as well as India Meteorological Department's seismology programme durinug 8th Plan. Department of Science & Technology is further formulating a proposal for a Mission Mode Project on seismic observations with' a view to updating and strengthening seismological studies in India.

RISING FREQUENCY AND INTENSITY OF EARTHQUAKES

5263. SHRI KRISHAN LAL SHARMA : Will the PRIME MINISTER be pleased to refer, to answer.to Unstarred 'Question 1039, given in, the Rajya "Sabha oh 9th December, 1993 and state' whether it is a fact that the frequency and intensity of earthquake in the country is on the increase, if so, the details thereof ?

THE MINISTER OF STATE IN THE PRIME MINISTER'S OFFICE AND MINISTER OF STATE IN THE DEPARTMENTS OF ATOMIC ENERGY *AND* SPACE WITH ADDITIONAL CHARGE OF THE MINISTER OF STATE THE MINISTRY OF SCIENCE AND TECHNOLOGY (SHRI BHUVNESH CHATURVEDI) : No, Sir, The measnremen's do not indicate an increase in the ambient seismic activity.

RESOURCES TO PREDICT MAHARASHTRA EARTHQUAKE

3264. SHRI KRISHNA KUMAR BIRLA : Will the PRIME MINISTER be pleased to state i

(a) whether Government's attention has been drawn to the newsitem captioned "'Quake could have been predicted" as reported in the 'Economic Times' dated 20-10-93;

(b) whether adequate data was available for seismologists to predict the recent earthquake, in Maharashtra ;

(c) if .sohether Goverment have not taken adequate steps to predict the earthquake; and

(d) if so', the reaction of Government in this regard ?

THE MINISTER OF STATE IN THE PRIME MINISTER'S OFFICE AND MINISTER OF STATE IN THE DEPARTMENTS OF ATOMIC ENERGY AND SPACE WITH ADDITIONAL CHARGE OF THE MINISTER OF STATE IN THE MINISTRY OF SCIENCE AND TECHNOLOGY (SHRI BHUVNESH CHATURVEDI) : (a) Yes, Sir.

(b) There is no technology available anywhere in the world ,to predict earthquakes in time, space and magnitude with reasonable degree of accuracy. (c) and (d) Do not arise, Sir,